

```

1  if __name__ == '__main__':
2      # CODE FOR CLUSTERING
3      file_path = './corona_data.csv'
4      target_col_name_list = ['Severity', 'Age']
5      base_date = parse("2020-7-3").date()
6
7      pcp = PycClusteringPeople(file_path, target_col_name_list, base_date)
8      # pcp.display_load_data()
9
10     # sse_list = [] # list for storing SSE(Sum of squares errors)
11     silhouette_score_list = [] # list for storing silhouette scores
12
13     # cluster with 'Severity' and 'Age' columns
14     k_list = [k for k in range(2, 10)] # cluster list
15
16     # distance_function = euclidean_distance
17     # distance_function = manhattan_distance
18     # distance_function = chebyshev_distance
19     # distance_function = minkowski_distance
20     distance_function = 'c_eu'
21
22     # for i, j in zip(range(0, 11), range(11, 0)):
23     #     print(i, j)
24     weight_list = [1, 1]
25     for num_cluster in k_list:
26         cluster_id_list = [id for id in range(num_cluster)]
27         predicted_list = pcp.pyc_cluster_kmeans(num_cluster,
28                                                 weight_list,
29                                                 distance_function)
30
31     print("Clustering is done.\n")
32
33     new_contacted = {
34         "Age": [95],
35         "Address": ['서울특별시 동작구 상도동'],
36         "Covid Status": ['Contacted'],
37         "Incurred Date": ['2020-06-20']
38     }
39     new_confirmed = {
40         "Age": [32],
41         "Address": ['서울특별시 동작구 상도동'],
42         "Covid Status": ['Confirmed'],
43         "Incurred Date": ['2020-06-30']
44     }
45     new_infected = pd.DataFrame.from_dict(new_contacted)
46
47     print(f"New data information")
48     for k, v in new_contacted.items():
49         print(f"{k:<13}: {v[0]:<20}")
50
51     num_cluster = 9
52     model_list = pcp.get_cluster_model_dic()
53     included_cluster_id, scaled_point, new_infected = pcp.find_cluster(new_infected,
54                                model_list[num_cluster])
55     print(f"{'Severity':<13}: {new_infected.loc[0, 'Severity']:<20}")
56     print() # float 1 line
57     print(f"Number of Clusters: {num_cluster}\n "
58           f"\tIncluded Cluster ID: {included_cluster_id}")
59
60     print(f"\tAge: {new_infected.loc[0, 'Age']}")
61     print(f"\tSeverity: {new_infected.loc[0, 'Severity']}")
62     pcp.describe_id(scaled_point, num_cluster, model_list[num_cluster-2])

```